We claim:

1. A bipolar junction transistor, comprising:

   a buried collector layer;

   a counterdoped collector region adjacent to said buried
   collector layer;

   a base region adjacent to said counterdoped collector
   region; and

   an emitter region adjacent to said base region.

2. The bipolar junction transistor of claim 1 wherein at
   least one of the dopant species in said counterdoped
   collector region has a dopant concentration of greater
   than $0.5 \times 10^{17} cm^{-3}$.

3. The bipolar junction transistor of claim 1 wherein the
   distance from the edge of said buried collector layer
   which is adjacent to said collector region to the edge
   of said base region which is adjacent to said collector
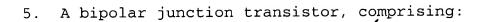   region is less than 1500 angstroms.

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4. The bipolar junction transistor of claim 1 wherein the base region is silicon germanium.

5. A bipolar junction transistor, comprising:

a buried collector layer;

a collector region adjacent to said buried collector
layer wherein said collector region contains at least
$0.5 \times 10^{17} cm^{-3}$ scattering centers;

a base region adjacent to said collector region; and

an emitter region adjacent to said base region.

6. The bipolar junction transistor of claim 5 wherein said
scattering centers are a species selected from the group
consisting of boron, aluminum, gallium, indium, carbon,
phosphorous, arsenic and antimony.

7. The bipolar junction transistor of claim 5 wherein the
distance from the edge of said buried collector layer
which is adjacent to said collector region to the edge
of said base region which is adjacent to said collector
region is less than 1500 angstroms.

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8. The bipolar junction transistor of claim 5 wherein the base region is silicon germanium.

9. The bipolar junction transistor of claim 5 wherein the scattering centers of said collector region are neutral scattering centers.

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